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| 09/726,136 | 11/29/2000 | John T. Armstrong | IVEN125541 | 6547 |
| 52531 | 7590 | 07/12/2006 | EXAMINER | |
| CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC | | | HOLLOWAY III, EDWIN C | |
| 1420 FIFTH AVENUE | | | ART UNIT | |
| SUITE 2800 | | | PAPER NUMBER | |
| SEATTLE, WA 98101-2347 | | | 2612 | |

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,136

Applicant(s)

ARMSTRONG ET AL.

Examiner

Edwin C. Holloway, III

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-17, 20-29 and 33-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-17, 37 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-10, 20-29 and 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

EXAMINER'S RESPONSE

1. In response to applicant's amendment filed 4-27-06, all the amendments to the specification and claims have been entered. The examiner has considered the new presentation of claims and applicant's arguments in view of the disclosure and the present state of the prior art. And it is the examiner's opinion that the claims are unpatentable for the reasons set forth in this Office action:

Claim Rejections - 35 USC § 102 & 103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich (US 5606323) in combination with Fukae (US 6072421), MacLellan '668 (US006456668B) and Carroll (US005521602A).

Heinrich discloses a transponder with first antenna element

Art Unit: 2612

20, second antenna element 22, impedance modulator 24, receiver 16 and controller 14 operating as claimed except that receiving FSK spread spectrum and transmitting PSK format are not described. See fig. 2 and cols. 3-4.

Fukae discloses an interrogator transmitting spread spectrum FSK to avoid interference in col. 2 line 65 - col. 3 line 10.

MacLellan discloses a transponder with PSK modulated backscatter modulation to fast response and inexpensive manufacture. See cols. 1-2, 4 and 7.

Carroll discloses a transponder that receives FSK interrogation and transmits a PSK response. This FSK/PSK combination has several advantages discussed in col. 2 lines 29-61 such as allowing the average signal power to remain at maximum, demodulation without on chip oscillator, write range same as read range and precludes interference between read and write commands and other transponders.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in the transponder of Heinrich the reception of spread spectrum FSK interrogation signals of Fukae for reduced interference and the transmitting of PSK modulation as disclosed in MacLellan for fast response and inexpensive manufacture. Further, including

Art Unit: 2612

both FSK reception and PSK transmitting in the same transponder would have been obvious because Carroll teaches that this FSK/PSK provides several advantages as discussed above.

5. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mardinian (US 6646543 / WO9839725) in combination with Snodgrass (5841770).

Regarding claims 39 and 41, Mardinian discloses a badge or transponder that transmits a response when a random number generated by the badge is within a range less than a variable (PMP) received from the interrogator. See fig. 2 and cols. 5-7. Mardinian does not disclose the details of the badge circuit.

Snodgrass discloses an analogous art RFID system with transponder 40 including antenna 168, receiver 170, random number generator 90, controller 42 in figs. 1 and 3 and cols. 5-10 for arbitration in an RFID system.

Regarding claims 9-10, transmitting when the random number is greater than the received variable and reducing to a final value would have been an obvious variation of the algorithm of Mardinian corresponding to inverted logic suggested by the increasing and decreasing in col. 7 of Mardinian and the inverted arbitration number of Snodgrass. Transmitting when the random number is greater and less than the received variable and

Art Unit: 2612

expanding a range to a final value would have been an obvious variation of the algorithm of Mardinian suggested by the range in col. 5 lines 35-46 of Mardinian. Further regarding claim 9-10, calculating ID (arbitration number) based on the random number would have been obvious in view of Snodgrass disclosing this in col. 13 lines 29-51 and col. 15 for iterative group addressing and/or to provide a short ID value for fast response.

6. Claims 1-2, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mardinian (US 6646543 / WO9839725) in combination with Snodgrass (5841770) as applied above and further in view of MacLellan '006 (US005940006A) or Carroll (US005521602A).

Regarding claims 1-2 and 5, Mardinian and Snodgrass do not expressly disclose half duplex interrogation with illumination. MacLellan '006 discloses Half duplex with CW interrogation in col. 1 lines 25-47 as common in RFID communication. Carroll discloses half duplex mode as an alternative to full duplex mode for read/write transponder in col. 2 line 62 col. 3 line 8.

Regarding claims 1-2 and 5, half duplex interrogation with illumination (CW) in the combination applied above would have been obvious MacLellan '006 teaches this to be common in RFID communication or because Carroll teaches this to be an obvious

Art Unit: 2612

alternative to full duplex communication between interrogator and transponder.

Regarding claim 6, calculating ID (arbitration number) based on the random number would have been obvious in view of Snodgrass disclosing this in col. 13 lines 29-51 and col. 15 for iterative group addressing and/or to provide a short ID value for fast response.

7. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mardinian (US 6646543 / WO9839725) in combination with Snodgrass (5841770) and MacLellan '006 (US005940006A) or Carroll (US005521602A) as applied above and further in view of Shloss (US 5307349).

Using a random number to select a slot in TDMA would have been obvious in view of Shloss disclosing this in an analogous art reader-transponder system for arbitration and suggested by the reference to random time slots in cols. 1-2 of Mardinian. Although Mardinian refers to a disadvantage of long frames, combination of activation slots and message slots in Shloss reduces this problem.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mardinian (US 6646543 / WO9839725) in combination with Snodgrass (5841770) and MacLellan '006

Art Unit: 2612

(US005940006A) or Carroll (US005521602A) as applied above and further in view of Reis (US 5686902).

Regarding claim 33, Reis discloses an RF tag communication system and method with plural interrogators that may have plural antennas for locating an tracking tags. Tag ID and antenna information is processes and communicated to host computer 40 locating and tracking tags. The antenna information also allows the host computer to select the optimum antenna for further communication. The antenna information is obviously stored in order to allow tracking and antenna selection for further communication. See col. 22 line 7 - col. 23 line 34.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in the combination applied above plural interrogator antennas and storage of antenna information with the tag ID in order to allow tracking the location of tags and selecting optimum antenna for further communication.

9. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mardinian (US 6646543 / WO9839725) in combination with Snodgrass (5841770) and MacLellan '006 (US005940006A) or Carroll (US005521602A) as applied above in view of Fogg (US 4479194).

Art Unit: 2612

Fogg discloses an election ballot in fig. 7A with bar code bits 274A for identification in col. 11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included RFID transponders attached to ballots in the combination applied above because Fogg teaches barcode ID's and the RFID transponders are known substitutes for such barcodes, making ballots with RFID transponders an obvious substitution for advantages such as not requiring alignment of the reader.

10. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guthrie (US005745037A) in combination with Buer (US005963104A) or Porter (US 4355366).

Guthrie discloses a tag or transponder with a true random number generator provided by a random number generator having a seed determined based on the temporal separation or difference between two inputs. See col. 8 lines 25-62. Guthrie does not expressly disclose this difference to be between a local clock signal and a clock signal derived from a received signal or random noise.

Buer discloses a random number generator using a phase noise (jitter) clock 30a based on the difference between two clocks to assure the randomness. The jitter clock may also be

Art Unit: 2612

considered noise that differs from other oscillation signal to effect the random calculation. See the abstract and col. 6 lines 5-21.

Porter discloses a true random number generator with a noise signal gated with a clock to provide a randomness based on the difference between the noise generator and the clock. See cols. 1-2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in Guthrie the random calculation based on difference between two clocks as disclosed in Buer to provide randomness. Alternatively calculation based on difference between clock and noise would have been obvious in view of Buer or Porter disclosing this to provide true random number generation.

Allowable Subject Matter

11. Claims 11-17 and 37-38 allowed. The prior art does not fairly teach or suggest all the limitations of these claims for the reasons stated in applicant's arguments.

Response to Arguments

12. Applicant's arguments with respect to claims 1-5, 9-10, 18-27, 30, 33-36 and 39-49 have been considered but are not

Art Unit: 2612

persuasive and/or moot in view of the new ground(s) of rejection.

Regarding claims 1-5, and 34-36 the argument that the reference lack half duplex is moot in view of the new rejections relying on Carroll or MacLellan '006 for this limitation.

Regarding claims 6 and 9-10, Snodgrass discloses generating an arbitration number based on a random number generator. Use of the arbitration number to specify a single responder is not precluded by claim 6. Further the arbitration numbers are used with format 142 (group address) by logically comparing the arbitration number with mask/branch data (col. 15 lines 3-27) and a new arbitration number may be generated by a tag in response to a IDG or IDGC command (col. 13 lines 29-51). Having programmed ID does not teach away from the combination. Mardinian including a "serial number" does not preclude the use of an arbitration number as disclosed in Snodgrass. Mardinian generates a random number for collision avoidance. Although Mardinian does not specify using the random number as an ID, this would have been obvious in view of Snodgrass using the random arbitration number as a shortened, programmable ID used in combination with a TAG ID that is a longer number provided by the manufacturer corresponding to a serial number. Note that col. 12 of Snodgrass discloses that the TAG ID may be sent along

Art Unit: 2612

with the arbitration number in format 194 of fig. 9.

Regarding claims 20-27, the argument that the prior art lacks both FSK and PSK in a transponder moot in view of the new rejection including Carroll to teach this limitation.

Regarding claim 33, the argument that the prior art lacks both storing antenna information is moot in view of the new rejection including Reis to teach this limitation.

Regarding claims 28-29, the allowance of these claims in the prior Office action is withdrawn in view of the new grounds of rejection made in this action.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Marsh (US 5699066) discloses an RFID transponder with random number generator seeded at reset.

CONTACT INFORMATION

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact an Electronic Business Center (EBC) representatives at 703-305-3028 or toll free at 866-217-9197 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at ebc@uspto.gov. The Patent EBC is a complete customer service center that supports all Patent e-business products and service applications.

Art Unit: 2612

Additional information is available on the Patent EBC Web site at <http://www.uspto.gov/ebc/index.html>.


Any inquiry of a general nature should be directed to the Technology Center 2600 receptionist at (571) 272-2600.

Facsimile submissions may be sent via central fax number 571-273-8300 to customer service for entry by technical support staff. Questions related to the operation of the facsimile system should be directed to the Electronic Business Center at (866) 217-9197. On July 15, 2005, the Central FAX Number will change to.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edwin C. Holloway, III whose telephone number is (571) 272-3058. The examiner can normally be reached on M-F (8:30-5:00). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (571) 272-7308.

EH
7/9/06


EDWIN C. HOLLOWAY, III
PRIMARY EXAMINER
ART UNIT 2612